

2005 ACROSS-BREED EPD TABLE

The table of adjustment factors to be used to estimate across-breed expected progeny differences (AB-EPDs) for sixteen breeds was presented to the Genetic Prediction Committee at the Beef Improvement Federation Annual Meeting in Billings, Montana on July 8 (see attached table). Bulls of different breeds can be compared on the same EPD scale by adding the appropriate adjustment factor to the expected progeny differences (EPDs) produced in the most recent genetic evaluations for each of the sixteen breeds.

For example, suppose the EPD for weaning weight for a Charolais bull is + 23.0 lb (which is slightly above the average of 19.2 for Charolais born in 2003) and for a Simmental is 37.0 (which is slightly above the average of 33.4 for Simmental bulls born in 2003). The across-breed EPD adjustment factors (see table) are 38.8 for Charolais and 22.8 for Simmental. The across-breed EPD for the Charolais bull is $38.8 + 23.0 = 61.8$ and for the Simmental bull is $22.8 + 37.0 = 59.8$. The expected weaning weight difference when both are mated to cows of another breed (e.g., Angus) would be $61.8 - 59.8 = 2.0$ lb.

The AB-EPDs are most useful to commercial producers purchasing bulls of more than one breed to use in systematic cross breeding programs. Uniformity from one generation to the next can be improved by selection of bulls with similar AB-EPDs. Uniformity is especially important in selection of bulls for use in rotational cross breeding systems for traits such as birth weight to manage calving difficulty and for traits related to cow size and milk production to effectively manage feed resources in cow herds. AB-EPDs for growth traits should be emphasized in selection of bulls for terminal cross breeding of older cows. AB-EPDs for birth weights should be considered in selection of bulls for use on first calf heifers if lower birth weights are needed.

EPDs are published annually by breed associations for most breeds of beef cattle. EPDs estimate differences expected in performance of future progeny of two or more bulls of the same breed for birth weight, weaning weight, yearling weight, maternal weaning weight, and milking ability (as reflected in progeny weaning weights). Without the across-breed adjustment factors, EPDs cannot be used to compare animals of different breeds because EPDs are computed separately for each breed association and each breed has a different base point. The adjustment factors reflect not only current breed differences but also differences in the base point for which average EPD = 0 for each breed. Thus, the adjustment factors alone are not estimates of average breed differences.

The adjustment factors in the table were updated using EPDs from the most recent national cattle evaluations conducted by associations of each of the sixteen breeds. The table is

based on “head to head” comparison of progeny of sires of those breeds at the U.S. Meat Animal Research Center (MARC), Clay Center, Nebraska as well as the EPD of sires of the progeny at MARC. Adjustment factors for MILK became available this year for Brangus and Beefmaster. The analyses were conducted by MARC Research Geneticists Dale Van Vleck and Larry Cundiff.

**ADJUSTMENT FACTORS TO ADD TO EPDs OF SIXTEEN
DIFFERENT BREEDS TO ESTIMATE ACROSS-BREED AB-EPDs**

| Breed | Birth wt. | Weaning wt. | Yearling wt. | Milk |
|-------------|-----------|-------------|--------------|-------|
| Angus | 0.0 | 0.0 | 0.0 | 0.0 |
| Hereford | 2.9 | -1.8 | -14.2 | -18.8 |
| Red Angus | 3.1 | -1.0 | 0.7 | -6.8 |
| Shorthorn | 7.3 | 32.0 | 44.7 | 12.9 |
| S. Devon | 6.2 | 21.9 | 41.0 | 4.5 |
| Brahman | 12.5 | 35.6 | -4.9 | 24.9 |
| Limousin | 4.0 | 1.8 | -20.8 | -16.2 |
| Simmental | 5.9 | 22.8 | 21.8 | 10.1 |
| Charolais | 10.0 | 38.8 | 53.2 | 1.8 |
| Gelbvieh | 4.7 | 6.3 | -22.3 | 2.4 |
| Maine-Anjou | 6.3 | -5.3 | -41.7 | -9.4 |
| Salers | 4.2 | 29.0 | 42.3 | 9.9 |
| Tarentaise | 3.1 | 30.6 | 13.1 | 18.3 |
| Braunvieh | 6.0 | 30.2 | 12.8 | 22.4 |
| Brangus | 5.1 | 19.6 | 19.9 | -3.6 |
| Beefmaster | 9.2 | 39.5 | 37.5 | -4.6 |

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